

DF2.5 (Serial No. 210001 and later)



FOREWORD

This supplementary service manual describes the outline, technical data and servicing procedures which differ from those of the following models.

Please read and thoroughly familiarize yourself with this information before using it for your service activities.

Applicable model and effective serial number:
00252F-210001 and later

NOTE:

- Use this supplement with the following service manual:
DF2.5 Service Manual (P/no, 99500-97J01-01E)

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GENERAL INFORMATION

* SPECIFICATIONS

* These specifications are subject to change without notice.

| Item | Unit | Data |
|---------|------|--------|
| | | DF2.5 |
| PRE-FIX | | 00252F |

DIMENSIONS & WEIGHT

| | | | |
|-----------------------------------|---|-------------------|---------------------------------------|
| Overall length (front to back) | | mm (in) | 437 (17.2): with tiller handle raised |
| Overall width (side to side) | | mm (in) | 262 (10.3) |
| Overall height | S | mm (in) | 963 (37.9) |
| Weight (without engine oil) | S | kg (lbs) | 13 (28.7) |
| Transom height | S | mm (inch type) | 435 (15) |

PERFORMANCE

| | | | |
|--------------------------------|--|---------|--------------------------------------|
| Maximum output | | kW (PS) | 1.8 (2.5) |
| Recommended operating range | | r/min | 5 250 – 5 750 |
| Idle speed | | r/min | 1 900 ± 100 (in-gear: approx. 1 500) |

POWER HEAD

| | | |
|---------------------|--------------------------|---------------------------|
| Engine type | | 4-stroke OHV |
| Number of cylinders | | 1 |
| Bore | mm (in) | 48.0 (1.89) |
| Stroke | mm (in) | 38.0 (1.50) |
| Total displacement | cm ³ (cu. in) | 68 (4.1) |
| Compression ratio | : 1 | 9.0 |
| Spark plug | NGK | CR6HSA |
| Ignition system | | SUZUKI PEI (Digital CDI) |
| Fuel supply system | | Carburetor |
| Exhaust system | | Above prop exhaust |
| Cooling system | | Water cooled |
| Lubrication system | | Wet sump by trochoid pump |
| Starting system | | Manual |
| Choke system | | Manual |
| Throttle control | | Twist grip |

| Item | Unit | Data |
|------|------|-------|
| | | DF2.5 |

FUEL & OIL

| | | |
|---------------------------------------|--------------------|---|
| Fuel | | Suzuki highly recommends that you use alcohol-free unleaded gasoline with a minimum pump octane rating of 87 (R/2 + M/2 method) or 91 (Research method). However, blends of unleaded gasoline and alcohol with equivalent octane content may be used. |
| Fuel tank capacity (Built-in tank) | L (US/Imp. gal) | 1.0 (0.26/0.22) |
| Engine oil | | <ul style="list-style-type: none"> • API classification : SG, SH, SJ, SL, SM or NMMA FC-W classification : SG, SH, SJ, SL, SM • Viscosity rating : SAE 10W-40 or NMMA FC-W 10W-40 |
| Engine oil amounts | L (US/Imp. qt) | 0.38 (0.40/0.33) |
| Gear oil | | SUZUKI Outboard Motor Gear Oil (Hypoid gear oil SAE90, API classification GL-5) |
| Gearcase oil amounts | ml (US/Imp. oz) | 70 (2.4/2.5) |

BRACKET

| | | |
|-----------------------------|---------|------------------------------------|
| Trim angle | Degrees | 6 – 20 |
| Number of tilt pin position | | 4 |
| Maximum tilt angle | Degrees | 74 (from lowest tilt pin position) |

LOWER UNIT

| | | | |
|------------------------------|-------------------------|---------------------|----------------------------|
| Reversing system | Gear | | |
| Transmission | Forward-Neutral | | |
| Reduction system | Bevel gear | | |
| Gear ratio | 13 : 28 (2.154) | | |
| Drive line impact protection | Spline drive rubber hub | | |
| Propeller | Blade | × Dia. | × Pitch (ID No.) |
| | 3 | × 188 mm (7-3/8 in) | × 135 mm (5-3/8 in) (A520) |

*** SERVICE DATA**

* These service data are subject to change without notice.

| Item | Unit | Data |
|------|------|-------|
| | | DF2.5 |

POWER HEAD

| | | |
|----------------------------------|-----------------------------------|--|
| Recommended operating range | r/min | 5 250 – 5 750 |
| Idle speed | r/min | 1 900 ± 100 (in-gear: approx. 1 500) |
| * Cylinder compression | kPa (kg/cm ² , psi) | 960 – 1 400 (9.6 – 14.0, 137 – 199) |
| Engine oil | | <ul style="list-style-type: none"> • API classification : SG, SH, SJ, SL, SM or NMMA FC-W classification : SG, SH, SJ, SL, SM • Viscosity rating : SAE 10W-40 or NMMA FC-W 10W-40 |
| Engine oil amounts | L (US/Imp. qt) | 0.38 (0.40/0.33) |
| Thermostat operating temperature | °C (°F) | 48 – 52 (118 – 126) |

* Figures shown are guidelines only, not absolute service limit.

CARBURETOR**For all markets except for US market**

| | | |
|---------------|------------|-----------------------|
| Type | Walbro | LMJ-26B |
| I.D mark | | LMJ-26B |
| Main jet | # | 62 |
| Main air jet | # | 140 |
| Pilot jet | # | 34 |
| Pilot air jet | # | 135 |
| Pilot screw | Turns open | Pre-set (1-7/8 ± 1/2) |
| Float height | mm | 10 ± 2 |

For US market

| | | |
|---------------|------------|-----------------------|
| Type | Walbro | LMJ-48 |
| I.D mark | | LMJ-48 |
| Main jet | # | 62 |
| Main air jet | # | 135 |
| Pilot jet | # | 34 |
| Pilot air jet | # | 145 |
| Pilot screw | Turns open | Pre-set (1-7/8 ± 1/2) |
| Float height | mm | 10 ± 2 |

| Item | Unit | Data |
|------|------|-------|
| | | DF2.5 |

CYLINDER HEAD/CAMSHAFT

| | | | | |
|-----------------------------------|-----|-------|---------|-----------------------------------|
| Cylinder head distortion | | Limit | mm (in) | 0.05 (0.002) |
| Cam height | IN, | STD | mm (in) | 28.480 – 28.680 (1.1213 – 1.1291) |
| | EX | Limit | mm (in) | 28.180 (1.1094) |
| Rocker arm shaft hole diameter | IN | STD | mm (in) | 4.015 – 4.027 (0.1581 – 0.1585) |
| | EX | | | |
| Rocker arm shaft outside diameter | IN | STD | mm (in) | 3.990 – 4.005 (0.1571 – 0.1577) |
| | EX | | | |

| Item | Unit | Data | |
|------|------|-------|--|
| | | DF2.5 | |

VALVE/VALVE GUIDE

| | | | | |
|--|--------|-------|-------------|--|
| Valve diameter | | IN | mm (in) | 20.0 (0.79) |
| | | EX | mm (in) | 18.0 (0.71) |
| Valve clearance (Cold engine condition) | IN | STD | mm (in) | 0.13 – 0.17 (0.005 – 0.007) |
| | EX | STD | mm (in) | 0.13 – 0.17 (0.005 – 0.007) |
| Valve seat angle | | IN | — | 45° |
| | | EX | — | 45° |
| Valve guide to valve stem clearance | IN | STD | mm (in) | 0.010 – 0.037 (0.0004 – 0.0015) |
| | | Limit | mm (in) | 0.075 (0.0030) |
| | EX | STD | mm (in) | 0.025 – 0.052 (0.0010 – 0.0020) |
| | | Limit | mm (in) | 0.090 (0.0035) |
| Valve guide inside diameter | IN, EX | STD | mm (in) | 4.000 – 4.012 (0.1575 – 0.1580) |
| Valve stem outside diameter | IN | STD | mm (in) | 3.975 – 3.990 (0.1565 – 0.1571) |
| | EX | STD | mm (in) | 3.960 – 3.975 (0.1559 – 0.1565) |
| Valve stem deflection | IN, EX | Limit | mm (in) | 0.35 (0.014) |
| Valve stem runout | IN, EX | Limit | mm (in) | 0.05 (0.002) |
| Valve head radial runout | IN, EX | Limit | mm (in) | 0.08 (0.003) |
| Valve head thickness | IN, EX | Limit | mm (in) | 0.5 (0.02) |
| Valve seat contact width | IN, EX | STD | mm (in) | 0.8 – 1.0 (0.03 – 0.04) |
| Valve spring free length | | STD | mm (in) | 22.8 (0.90) |
| | | Limit | mm (in) | 21.9 (0.86) |
| Valve spring tension | | STD | N (kg, lbs) | 36.05 – 42.85 (3.61 – 4.29, 8.0 – 9.5) for 16.9 mm (0.67 in) |
| | | Limit | N (kg, lbs) | 33.53 (3.35, 7.39) for 16.9 mm (0.67 in) |

| Item | Unit | Data | |
|------|------|-------|--|
| | | DF2.5 | |

CYLINDER/PISTON/PISTON RING

| | | | |
|-----------------------------------|------------|---------|------------------------------------|
| Cylinder distortion | Limit | mm (in) | 0.05 (0.002) |
| Piston to cylinder clearance | STD | mm (in) | 0.018 – 0.033 (0.0007 – 0.0013) |
| | Limit | mm (in) | 0.100 (0.0039) |
| Cylinder bore | STD | mm (in) | 48.000 – 48.015 (1.8898 – 1.8904) |
| Cylinder measuring position | | mm (in) | 20 (0.8) from cylinder top surface |
| Piston skirt diameter | STD | mm (in) | 47.975 – 47.990 (1.8888 – 1.8894) |
| Piston measuring position | | mm (in) | 5 (0.2) from piston skirt end |
| Cylinder bore wear | Limit | mm (in) | 0.100 (0.0039) |
| Piston ring end gap | 1st, STD | mm (in) | 0.15 – 0.35 (0.006 – 0.014) |
| | 2nd, Limit | mm (in) | 0.50 (0.020) |
| Piston ring free end gap | 1st, STD | mm (in) | Approx. 6.1 (0.24) |
| | 1st, Limit | mm (in) | 4.9 (0.19) |
| | 2nd, STD | mm (in) | Approx. 5.7 (0.22) |
| | 2nd, Limit | mm (in) | 4.6 (0.18) |
| Piston ring to groove clearance | 1st, STD | mm (in) | 0.020 – 0.060 (0.0008 – 0.0024) |
| | 2nd, Limit | mm (in) | 0.120 (0.0047) |
| Piston ring groove width | 1st, STD | mm (in) | 1.21 – 1.23 (0.048 – 0.049) |
| | Oil, STD | mm (in) | 1.51 – 1.53 (0.059 – 0.060) |
| Piston ring thickness | 1st, STD | mm (in) | 1.17 – 1.19 (0.046 – 0.047) |
| Pin clearance in piston pin hole | STD | mm (in) | 0.002 – 0.013 (0.0001 – 0.0005) |
| | Limit | mm (in) | 0.040 (0.0016) |
| Piston pin outside diameter | STD | mm (in) | 11.995 – 12.000 (0.4722 – 0.4724) |
| | Limit | mm (in) | 11.980 (0.4717) |
| Piston pin hole diameter | STD | mm (in) | 12.002 – 12.008 (0.4725 – 0.4728) |
| | Limit | mm (in) | 12.030 (0.4736) |
| Pin clearance in conrod small end | STD | mm (in) | 0.006 – 0.019 (0.0002 – 0.0007) |
| | Limit | mm (in) | 0.050 (0.0020) |

| Item | Unit | Data |
|------|------|-------|
| | | DF2.5 |

CRANKSHAFT/CONROD

| | | | |
|--|-------|---------|-----------------------------------|
| Conrod small end inside diameter | STD | mm (in) | 12.006 – 12.014 (0.4727 – 0.4730) |
| | Limit | mm (in) | 12.040 (0.4740) |
| Conrod big end oil clearance | STD | mm (in) | 0.020 – 0.040 (0.0008 – 0.0016) |
| | Limit | mm (in) | 0.080 (0.0031) |
| Conrod big end inside diameter | STD | mm (in) | 19.015 – 19.025 (0.7486 – 0.7490) |
| Crank pin outside diameter | STD | mm (in) | 18.985 – 18.995 (0.7474 – 0.7478) |
| Crank pin outside diameter difference (out-of-round and taper) | Limit | mm (in) | 0.010 (0.0004) |
| Conrod big end side clearance | STD | mm (in) | 0.20 – 0.70 (0.008 – 0.028) |
| | Limit | mm (in) | 1.00 (0.039) |
| Conrod big end width | STD | mm (in) | 17.50 – 17.80 (0.689 – 0.701) |
| Crank pin width | STD | mm (in) | 18.00 – 18.20 (0.709 – 0.717) |
| Crankshaft runout | Limit | mm (in) | 0.05 (0.002) |

ELECTRICAL**For all markets except for US market**

| | | | |
|---------------------------|-----------|-------------|---------------------------|
| Ignition timing | | Degrees | BTDC 31 |
| Ignition coil resistance | Secondary | kΩ at 20 °C | 2.0 – 2.5 |
| Spark plug cap resistance | | kΩ at 20 °C | 4 – 6 |
| Standard spark plug | Type | NGK | CR6HSA |
| | Gap | mm (in) | 0.6 – 0.7 (0.024 – 0.028) |

For US market

| | | | |
|---------------------------|-----------|------------------|----------------------------------|
| Ignition timing | | Degrees at r/min | BTDC 5 at 2000 – BTDC 31 at 4000 |
| Ignition coil resistance | Secondary | kΩ at 20 °C | 2.0 – 2.5 |
| Spark plug cap resistance | | kΩ at 20 °C | 4 – 6 |
| Standard spark plug | Type | NGK | CR6HSA |
| | Gap | mm (in) | 0.6 – 0.7 (0.024 – 0.028) |

| Item | Unit | Data |
|------|------|-------|
| | | DF2.5 |

LOWER UNIT

Preliminary gear shim & thrust washer

| | | |
|---------------------------------------|---------|------------|
| Pinion gear backup shim | mm (in) | 2.0 (0.08) |
| Forward gear backup shim | mm (in) | 0.5 (0.02) |
| Propeller shaft reverse thrust washer | mm (in) | 1.8 (0.07) |

Initial selection-shim adjustment may be required.

PERIODIC MAINTENANCE

Service item has been added, and additional item is “Anodes (internal power head)”.

PERIODIC MAINTENANCE SCHEDULE

PERIODIC MAINTENANCE CHART

| Interval Item to be serviced | Initial 20 hrs. or 1 month | Every 50 hrs. or 3 months | Every 100 hrs. or 6 months | Every 200 hrs. or 12 months |
|---------------------------------|-------------------------------------|------------------------------|-------------------------------|--------------------------------|
| Spark plug | — | — | I | R |
| Breather hose and Fuel line | I | I | I | I |
| Engine oil | R | — | R | R |
| Gear oil | R | — | R | R |
| Lubrication | — | I | I | I |
| Anode (external) | — | I | I | I |
| Anodes (internal power head) | — | — | I | I |
| Fuel filter | Replace every 400 hours or 2 years. | | | |
| Ignition timing | — | — | — | I |
| Carburetor | I | — | I | I |
| Idle speed | I | — | — | I |
| Valve clearance | I | — | — | I |
| Water pump | — | — | — | I |
| Water pump impeller | — | — | — | R |
| Propeller nut & pin | I | — | I | I |
| Bolts and Nuts | T | — | T | T |

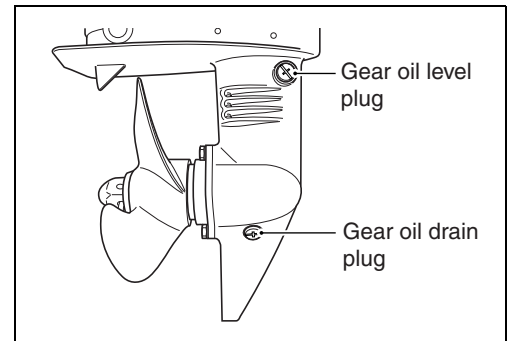
I: Inspect and clean, adjust, lubricate or replace, if necessary T: Tighten R: Replace

MAINTENANCE AND TUNE-UP PROCEDURES

GEAR OIL

OUTLINE

- The position of gear oil level plug has been changed.
- Service procedure is same as previous model.



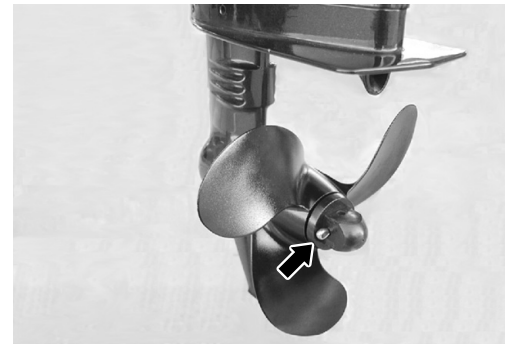
PROPELLER/NUT/COTTER PIN

OUTLINE

The propeller has been changed from shear pin type to spline drive rubber hub type.

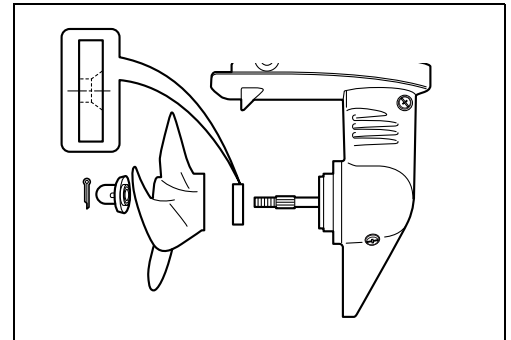
Inspect initially after 20 hours (1 month) and every 100 hours (6 months).

- Inspect the propeller for bent, chipped or broken blades. If damage noticeably affects operation, replace.
- Inspect propeller splines. Replace propeller if splines are worn, damaged or twisted.
- Inspect propeller bush for slippage. Replace if necessary.
- Make sure that the propeller nut is tightened.
- Make sure that the cotter pin is installed securely.



NOTE:

Install the propeller bush stopper to the propeller shaft as its chamfered side faces to the gear case.



IGNITION AND ELECTRICAL

OUTLINE

The ignition system has been changed from transistorized ignition to digital CDI.
In accordance with this change, the flywheel and the igniter unit have been changed.

IGNITION SYSTEM

IGNITION TIMING ADVANCE (Late type)

For all markets except for US market

| | |
|-------------------------|---------------------------------------|
| Ignition timing advance | Approx. 31° BTDC at 2000 – 4000 r/min |
|-------------------------|---------------------------------------|


For US market

| | |
|-------------------------|--|
| Ignition timing advance | 5° BTDC at 2000 r/min – 31° BTDC at 4000 r/min |
|-------------------------|--|

INSPECTION

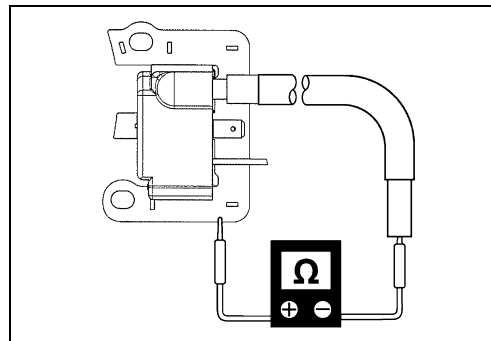
IGNITION SECONDARY COIL RESISTANCE

Measure the secondary coil resistance in the igniter unit.

 **09930-99320: Digital tester**

 **Tester range: Ω (Resistance)**

1. Remove the spark plug cap from the high-tension cord.
2. Measure the secondary coil resistance.




| Tester probe connection | |
|-------------------------|-------------|
| Probe | Other probe |
| High-tension cord | Core |

Ignition secondary coil resistance : 2.0 – 2.5 k Ω

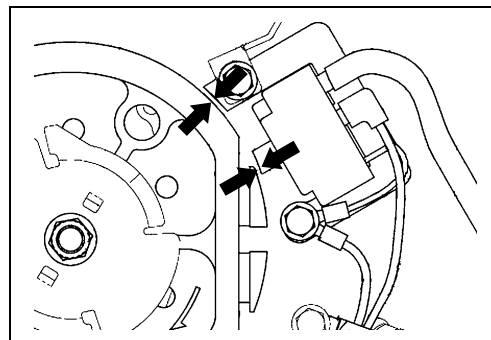
If the measurement is out of the specification, replace the igniter unit.

IGNITER TO FLYWHEEL MAGNETO AIR GAP

Measure the air gap of between the flywheel magneto and igniter unit.

 **09900-20803: Thickness gauge**

Air gap: 0.5 mm (0.02 in)



FUEL SYSTEM (For US market)

OUTLINE

A fuel pump has been added. This is a diaphragm type and operated by pulsation inside the intake manifold.

⚠ WARNING

Before servicing the fuel system, read and understand “PRECAUTION ON FUEL SYSTEM SERVICE” in the DF2.5 service manual (P/no., 99500-97J01-01E).

FUEL PUMP

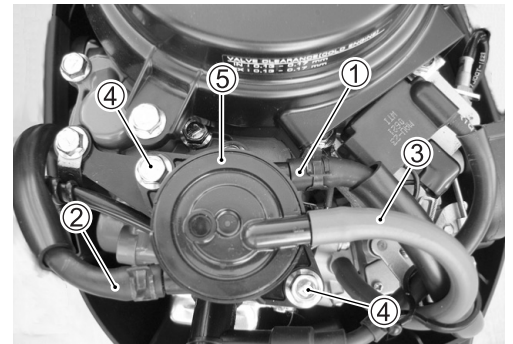
NOTE:

The fuel pump is a non-repairable component.

Do not attempt to disassemble the fuel pump. It must be replaced as a complete unit if it is defective.

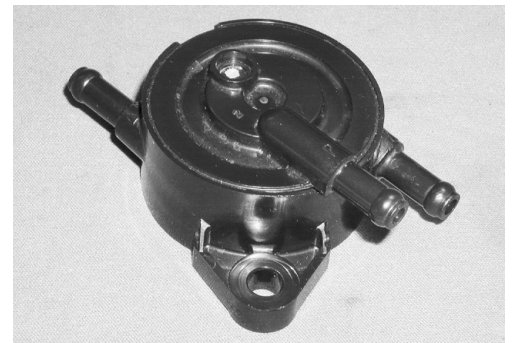
REMOVAL

1. Disconnect the inlet hose ①, outlet hose ② and vacuum hose ③ from fuel pump.
2. Remove the two bolts ④ securing fuel pump.
3. Remove the fuel pump ⑤.



INSPECTION

Inspect the fuel pump. If crack or other damage is found, replace the fuel pump.

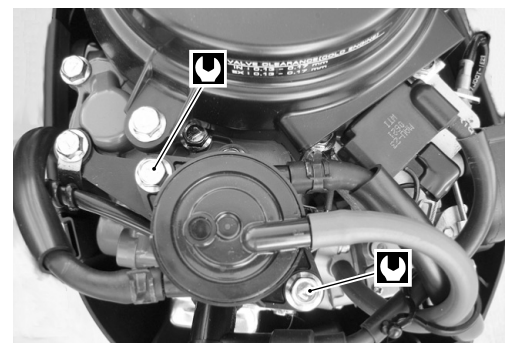


INSTALLATION

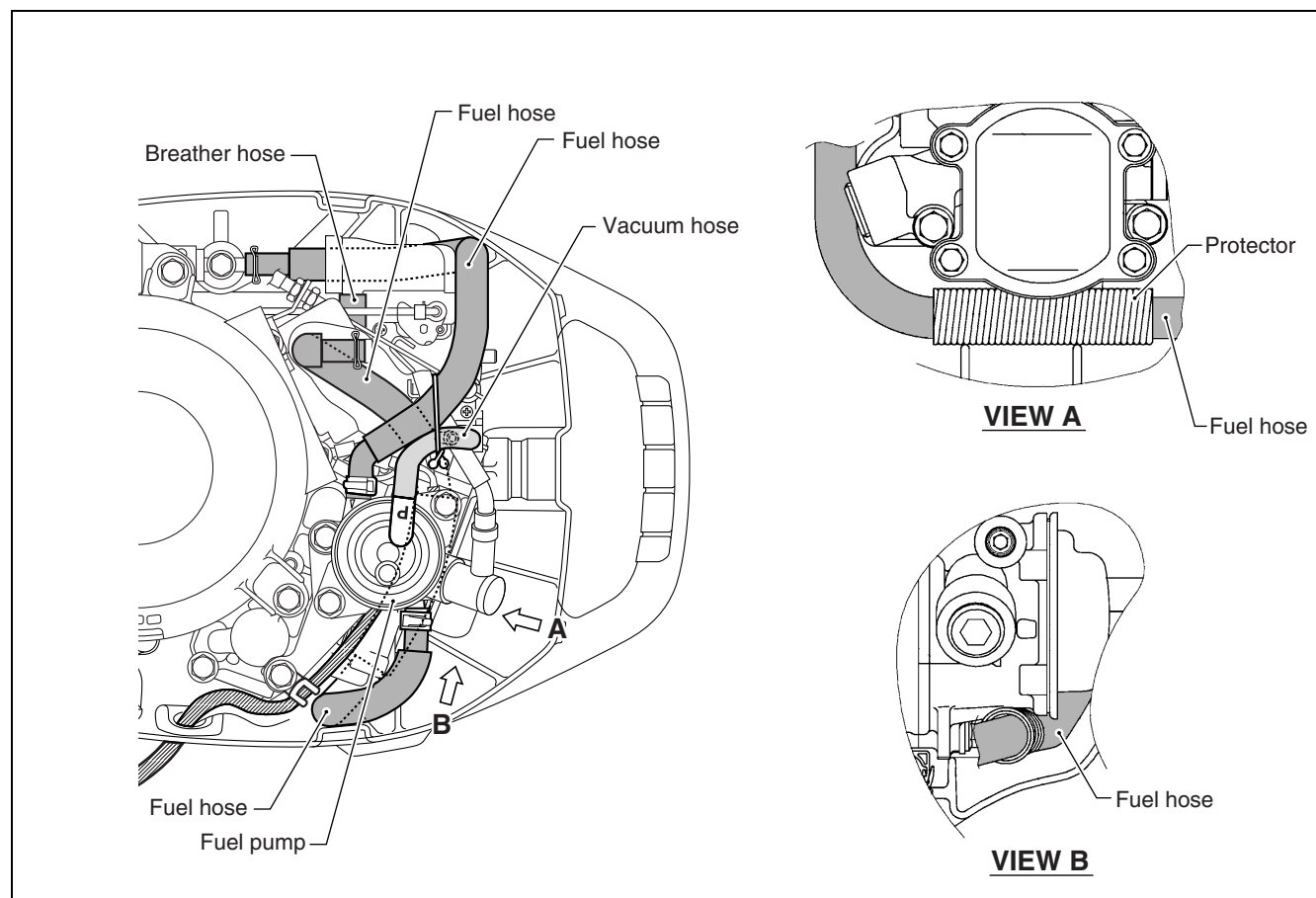
Installation is reverse order of removal with the special attention to the following step.

- Tighten the fuel pump mounting bolts to the specified torque.

 **Fuel pump mounting bolt: 6 N·m (0.6 kg-m, 4.5 lb-ft)**



- If cracks, swelling or other damage is found, replace the fuel hose.
- If clogged is found, clean the hose and the jet.



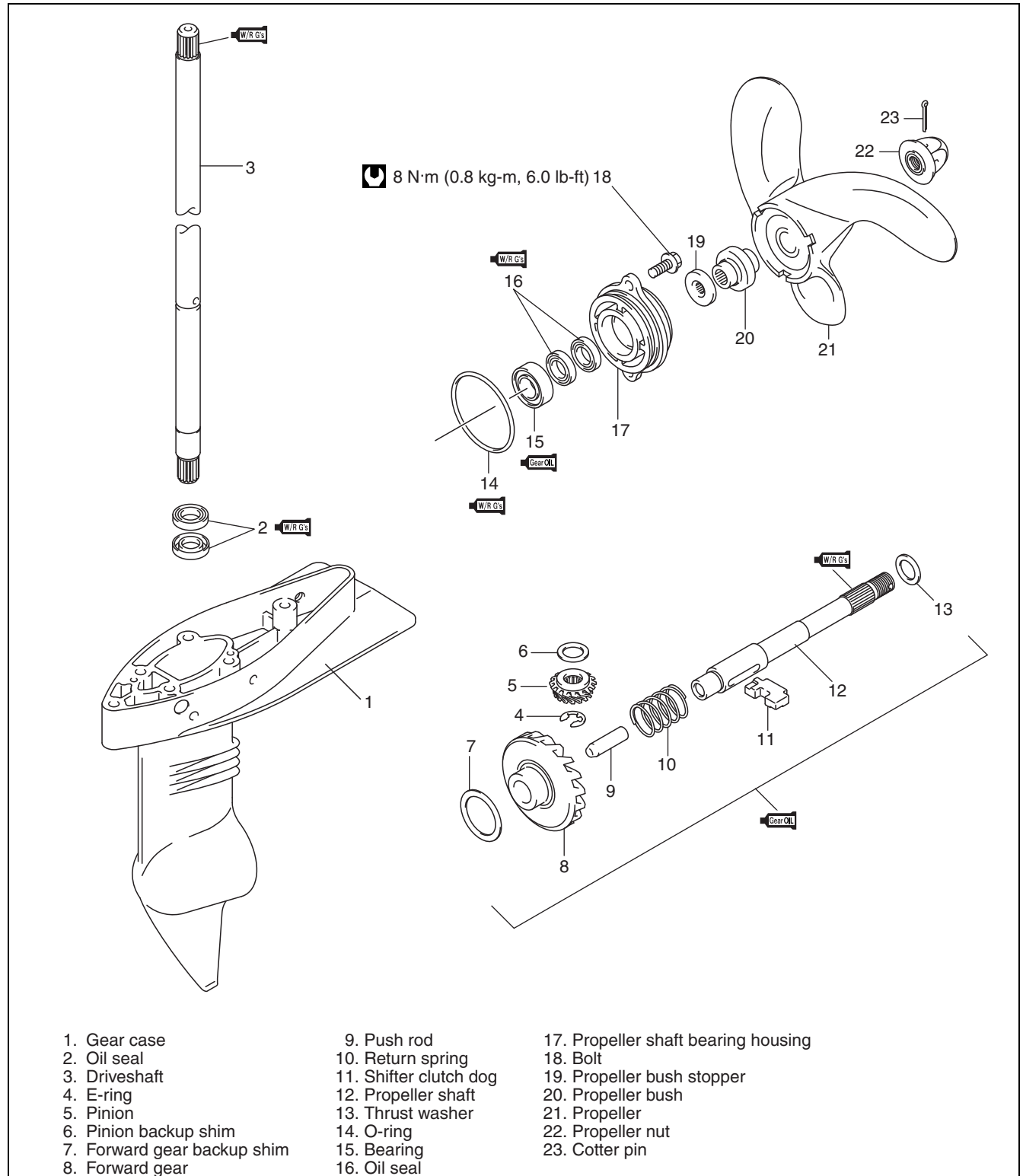
LOWER UNIT

OUTLINE

The lower unit for DF2.5 has been newly designed.

The new one has been made based on the early one, but the contents of change are many as follows.

LOWER UNIT COMPONENTS



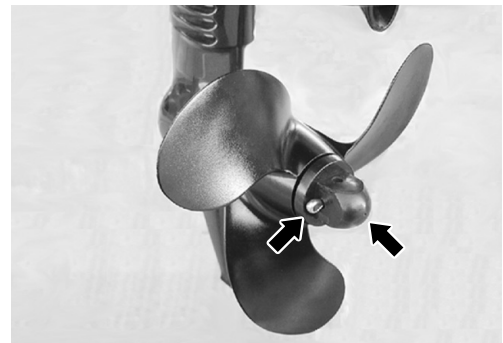
PROPELLER

⚠ WARNING

- When installing or removing the propeller, shift into “Neutral” and remove the emergency stop switch lock plate so that the motor cannot be started accidentally.
- To prevent injury from propeller blades, wear gloves and place a block of wood between the anti-cavitation plate and the propeller blade tips to lock the propeller in place before attempting to remove or install propeller nut.

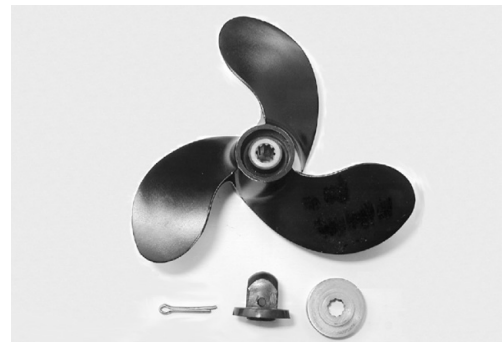
REMOVAL

1. Remove the cotter pin and the propeller nut, then detach the propeller.
2. Remove the propeller bush stopper.




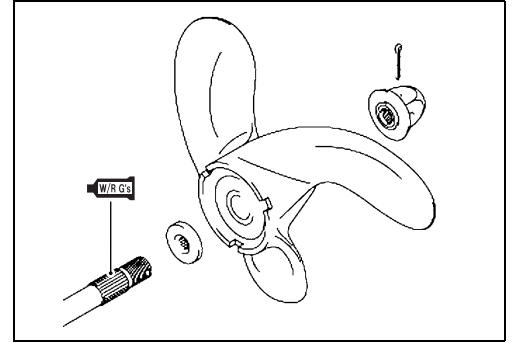
INSPECTION

- Inspect the propeller for bent, chipped or broken blades. Replace or repair propeller if in damaged condition.
- Inspect propeller bush splines. Replace or repair propeller if splines are worn or damaged.
- Inspect propeller bush for deterioration or slipping. Replace if necessary.



INSTALLATION

- Apply the Water Resistant Grease to the propeller shaft.
-  **99000-25350 : Suzuki Water Resistant Grease**
- Push the cotter pin through the nut and propeller shaft, then bend the pin securely.



LOWER UNIT

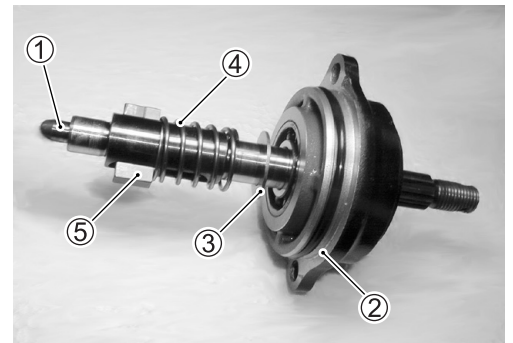
Disassembly and reassembly procedures of the lower unit are basically the same as previous model except for the following.

PROPELLER SHAFT COMPONENTS

Removal and installation procedures of the propeller shaft components are basically the same as previous model.

DISASSEMBLY OF PROPELLER SHAFT COMPONENTS

1. Remove the push rod ① from propeller shaft.
2. Slide the propeller shaft away from bearing housing ②.
Remove the washer ③, spring ④ and clutch dog shifter ⑤.



INSPECTION

NOTE:

If excessive wear, crack, defective or other damage is found on any component, replace.

- Inspect the push rod. If excessive wear or other damage is found, replace.
- Inspect the clutch dog shifter. If excessive wear, crack, chip or other damage is found, replace.
- Inspect the return spring. If excessive wear or other damage is found, replace.



- Inspect the propeller shaft. If excessive wear, twist or other damage is found, replace



REASSEMBLY OF PROPELLER SHAFT COMPONENTS

- Reassemble propeller shaft components with reverse order of disassembly.
- Apply the Water Resistant Grease to the O-ring ① and the oil seals of the bearing housing.

 **99000-25350: SUZUKI WATER RESISTANT GREASE**

NOTE:

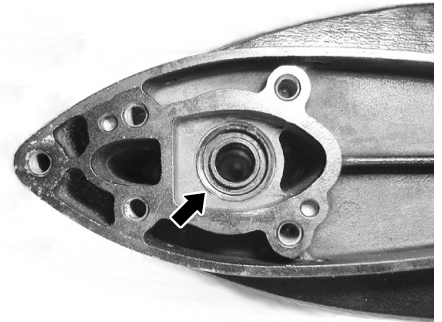
When installing the propeller shaft/housing assembly to the gear case, hold the clutch dog shifter the horizontal to prevent clutch dog shifter dropping out.



DRIVESHAFT OIL SEALS

INSPECTION

- Visually check the oil seals. If cut, nick, excessive wear or other damage is found, replace the oil seals.



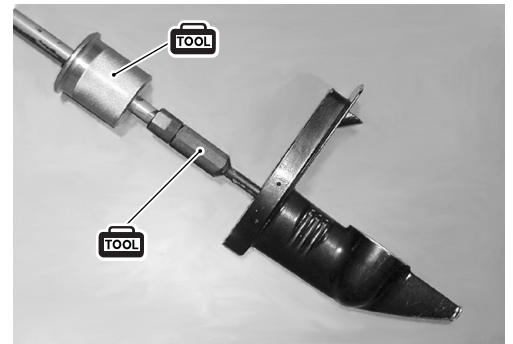
REPLACING DRIVESHAFT OIL SEALS

- Remove the two oil seals using special tools.

TOOL 09921-20200: Bearing remover
09930-30104: Sliding hammer

CAUTION

**Do not re-use oil seal once removed.
Always use a new oil seal.**



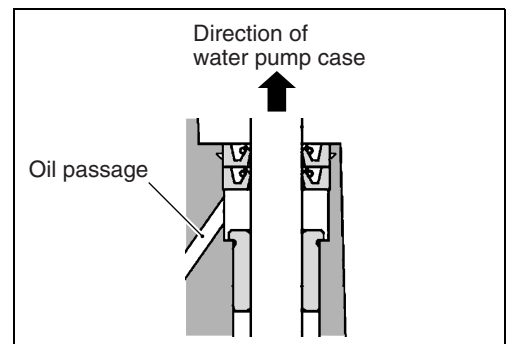
- Apply the Water Resistant Grease to outer circumference of the oil seals.

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- Drive the two oil seals (one at a time) into the gearcase.
The lipped portion of seal should face towards water pump case.

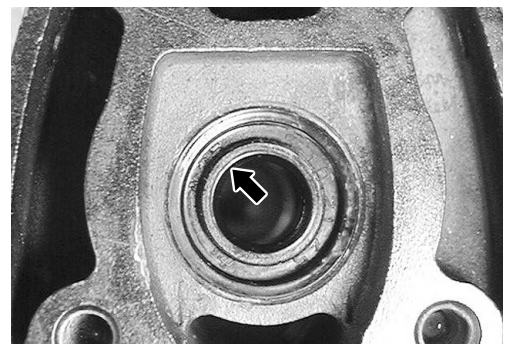
CAUTION

When installing oil seals, prevent the oil seal from closing oil passage.

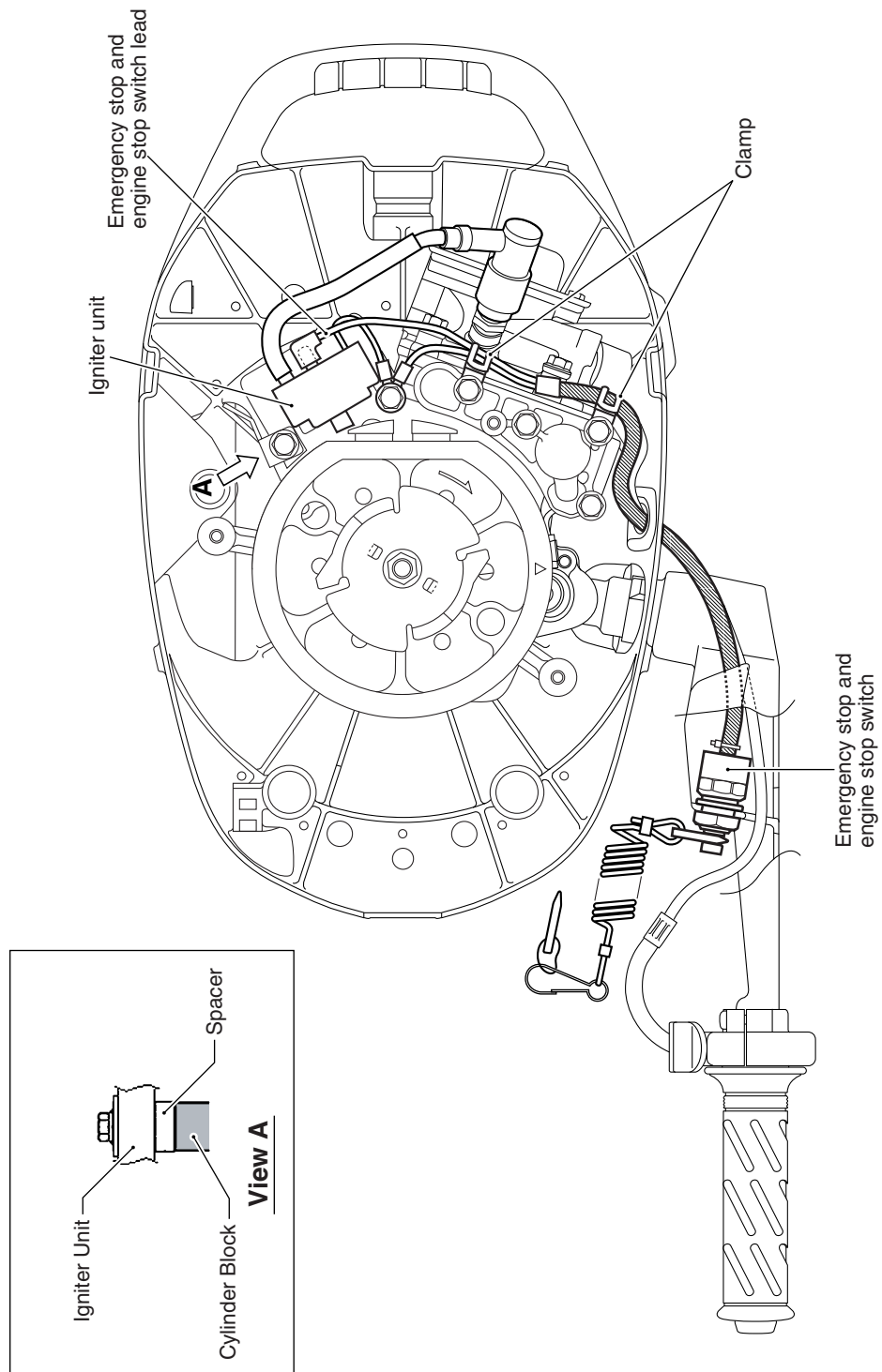


- Apply the Water Resistant Grease to the seal lips.

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WIRE ROUTING (For all markets except for US market)



WIRE ROUTING (For US market)

